

WHAT IS CLAIMED IS:

1. An electronic camera comprising:
a photoelectric converter; and
a shutter having a single set of shutter blades that move to open and
5 close between a closed state, in which the shutter blades block light from reaching the
photoelectric converter, and a shielding release state, in which the shutter blades do
not block the light from reaching the photoelectric converter.
2. The electronic camera of claim 1, further comprising:
a shutter driver that drives the shutter blades; and
10 a controller, coupled to and controlling the photoelectric converter and
the shutter, to begin charge accumulation by the photoelectric converter when the
shutter blades are in the shielding release state, and to control the shutter driver to
place the shutter blades in the closed state after the charge accumulation is completed.
3. The electronic camera of claim 2, wherein the controller operates the
15 shutter driver to change the shutter blades from the closed state to the shielding
release state in response to a release operation, causes the charge accumulation of the
photoelectric converter to begin thereafter, and operates the shutter driver in order to
close the shutter blades after the charge accumulation is completed.
4. The electronic camera of claim 2, further comprising:
20 a movable mirror in an optical path of the light, the movable mirror
being movable between a viewing position, in which the movable mirror directs the
light to a viewfinder, and an imaging position, in which the movable mirror withdraws
from the optical path to allow the light to reach the photoelectric converter prior to the
charge accumulation by the photoelectric converter;
25 wherein the controller controls the shutter driver to begin placing the
shutter blades in the shielding release state between the withdrawing of the movable
mirror and a beginning of the charge accumulation by the photoelectric converter after
a specified time elapses after the movable mirror withdraws from the optical path.
5. The electronic camera of claim 2, wherein the controller controls
30 reading of the accumulated charge from the photoelectric converter after the charge
accumulation is completed and the shutter blades are moved to the closed state.

6. The electronic camera of claim 5, wherein the controller controls the shutter driver to drive the shutter blades into the shielding release state after the charge reading is completed.

5 7. The electronic camera of claim 1, wherein:
the photoelectric converter is disposed in an image pick-up unit;
the shutter is disposed in a shutter unit; and
a portion of the image pick-up unit that opposes the shutter unit
protrudes into a portion of the shutter unit.

10 8. The electronic camera of claim 7, wherein the portion of the image
pick-up unit that opposes the shutter unit has a filter, the filter located between the
shutter blades and the photoelectric converter, and the filter protrudes into the portion
of the shutter unit.

15 9. The electronic camera of claim 7, wherein the shutter blades move at
approximately a right angle to an optical path of the light that reaches the
photoelectric converter, and a shutter blade that moves by a largest amount is disposed
farther from the photoelectric converter than other ones of the shutter blades.

20 10. The electronic camera of claim 7, wherein the shutter blades move at
approximately a right angle to an optical path of the light that reaches the
photoelectric converter, and the shutter unit is disposed at an angle in a main camera
body of the electronic camera so that, when the shutter blades are in the closed state, a
distance between each of the respective shutter blades and the photoelectric converter
is substantially equal.

25 11. The electronic camera of claim 7, wherein the shutter unit includes a
lens-side frame located on a side of the shutter unit that faces away from the image
pick-up unit, the lens-side frame has a first opening part to transmit the light to the
shutter blades, the first opening part is formed smaller than a cross-section of the
portion of the image pick-up unit that opposes the shutter unit, and a shutter curtain
defined by the shutter blades has a size corresponding to the first opening part.

30 12. The electronic camera of claim 11, wherein the shutter unit also
includes an image pick-up unit-side frame on a side of the shutter unit that opposes
the image pick-up unit, the image pick-up unit-side frame has a second opening part
to transmit the light to the photoelectric converter, the second opening part is formed

larger than the first opening part and larger than the cross-section of the portion of the image pick-up unit that opposes the shutter unit.

13. The electronic camera of claim 7, wherein the portion of the image pick-up unit that opposes the shutter unit is in contact with the shutter unit.

5 14. The electronic camera of claim 14, further comprising a resilient member that presses the image pick-up unit into contact with the shutter unit.

15. An electronic camera comprising:
an image pick-up unit disposed on an optical path of light that enters the electronic camera, the image pick-up unit including a photoelectric converter that receives the light; and

10 a shutter unit disposed on the optical path between the photoelectric converter and a portion of the camera through which the light enters the camera, the shutter unit housing a shutter curtain;

15 a portion of the image pick-up unit that opposes the shutter unit protruding into a portion of the shutter unit.

16. The electronic camera of claim 15, wherein the portion of the image pick-up unit that opposes the shutter unit has a filter, the filter located between the shutter curtain and the photoelectric converter, and the filter protrudes into the portion of the shutter unit.

20 17. The electronic camera of claim 15, wherein the shutter curtain has a plurality of shutter blades that move at approximately a right angle to the optical path of the light, and a shutter blade that moves by a largest amount is disposed farther from the photoelectric converter than other ones of the shutter blades.

25 18. The electronic camera of claim 15, wherein the shutter curtain has a plurality of shutter blades that move at approximately a right angle to the optical path of the light, and the shutter unit is disposed at an angle in a main camera body of the electronic camera so that, when the shutter blades are in a closed state, a distance between each of the respective shutter blades and the image pick-up unit is substantially equal.

30 19. The electronic camera of claim 15, wherein the shutter unit includes a lens-side frame located on a side of the shutter curtain that faces away from the image pick-up unit, the lens-side frame has a first opening part to transmit the light to the shutter curtain, the first opening part is formed smaller than a cross-section of the

portion of the image pick-up unit that opposes the shutter unit, and the shutter curtain has a size corresponding to the first opening part.

20. The electronic camera of claim 19, wherein the shutter unit has an image pick-up unit-side frame on a side of the shutter unit that opposes the image pick-up unit, the image pick-up unit-side frame has a second opening part to transmit
5 the light to the photoelectric converter, the second opening part is formed larger than the first opening part and larger than the cross-section of the portion of the image pick-up unit that opposes the shutter unit.

21. The electronic camera of claim 15, wherein the portion of the image
10 pick-up unit that opposes the shutter unit is in contact with the shutter unit.

22. The electronic camera of claim 21, further comprising a resilient member that presses the image pick-up unit into contact with the shutter unit.

23. A method of making an electronic camera, comprising the steps of:
providing a photoelectric converter in an optical path of light within
15 the electronic camera; and

providing in the optical path, between the photoelectric converter and a portion of the electronic camera through which the light enters the electronic camera, a shutter having a single set of shutter blades, the shutter blades being movable to open and close between a closed state, in which the shutter blades block the light from
20 reaching the photoelectric converter, and a shielding release state, in which the shutter blades do not block the light from reaching the photoelectric converter.